AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A system for detecting the status of a vent associated with a fluid ~~supply~~ container upstream of an infusion pump configured to draw fluid out of the fluid container through a fluid line by means of a pump mechanism in engagement with the fluid line, the vent having an open status at which the vent allows air to vent into the fluid container as fluid is drawn out of the fluid container resulting in pressure in the fluid line reducing at a rate expected under normal venting conditions, the vent having a blocked status at which venting of air into the container is blocked as fluid is drawn out of the fluid container resulting in pressure in the fluid line progressively reducing at a rate in excess of the rate expected under normal venting conditions, the system comprising:

a pressure sensor located upstream of ~~an infusion pump~~ the pump mechanism, the pressure sensor configured to provide pressure signals representative of the pressure within [[a]] the fluid line upstream of the pump mechanism;

a processor in communication with the pressure sensor, the processor configured ~~to monitor a parameter representative of a status of the infusion pump and~~ to sample the pressure signals received from the pressure sensor over a plurality of selected pump cycles, ~~as a function of the status of the infusion pump, and, if the sampled signals indicate a negative pressure in the fluid line, to provide an alert~~ to compute for each of the plurality of selected pump cycles an average pressure value from the pressure signals received, to determine a progressive reduction in pressure in the fluid line based at least on the computed average pressure values, and to

generate a blocked vent alert when the progressive reduction in pressure in the fluid line is determined to be at a rate in excess of the rate expected under normal venting conditions.

2. (Canceled)

3. (Currently amended) The system of ~~claim 2~~ claim 1 wherein the processor samples over a selected pump cycle ~~the signals received from the pressure sensor~~ when ~~the value of the monitored parameter exceeds~~ a predetermined number of pump cycles has occurred after a previously selected pump cycle.

4. (Currently amended) The system of ~~claim 2~~ claim 1 wherein the processor periodically samples the signals received from the pressure sensor after a predetermined number of pump cycles have occurred.

5. (Original) The system of claim 4 wherein the predetermined number of pump cycles is three.

6. (Canceled)

7. (Currently amended) A method of determining the status of a vent in a fluid line located upstream of a peristaltic infusion pump, the ~~peristaltic~~ infusion pump configured to ~~pump~~ draw fluid out of a fluid container in a cyclical manner, the vent having an open status at which the vent allows air to vent into the fluid container as fluid is drawn out of the fluid container resulting in pressure in the fluid line reducing at a rate expected under normal venting conditions, the vent having a blocked status at which venting of air into the container is blocked as fluid is drawn out of the fluid container resulting in pressure in the fluid line progressively reducing at a rate in excess of the rate expected under normal venting conditions, the method comprising:

~~determining a value representative of the number of cycles that the have been completed by the infusion pump;~~

sampling signals provided by a pressure sensor over a plurality of pump cycles, the pressure sensor configured to sense the pressure in [[a]] the fluid line upstream of a pump mechanism of the infusion pump;

processing the sampled signals to determine [[a]] an average value for the pressure in the upstream fluid line for each of the plurality of pump cycles;

determining a rate of change of the average values; and

providing an alert ~~if the pressure value is negative~~ when the rate of change exceeds a limit for normal venting conditions.

8. (Currently amended) The method of claim 7 wherein sampling ~~occurs only when~~ the signals provided by the sensor comprises sampling signals over a first selected pump cycle and sampling signals over a second selected pump cycle subsequent to completing a predetermined number of unselected pump cycles ~~have been completed~~ after the first selected pump cycle.

9. (Canceled)

10. (Currently amended) A system for detecting ~~a change in pressure in an infusion line upstream of an infusion pump~~ the status of a vent associated with a fluid container upstream of an infusion pump configured to draw fluid out of the fluid container through a fluid line by means of a pump mechanism in engagement with the fluid line, the vent having an open status at which the vent allows air to vent into the fluid container as fluid is drawn out of the fluid container resulting in pressure in the fluid line to reduce at a rate expected under normal venting conditions, the vent having a blocked status at which venting of air into the container is blocked as fluid is drawn out of the fluid container resulting in pressure in the fluid line to progressively

reduce at a rate in excess of the rate expected under normal venting conditions, the system comprising:

a pressure sensor located upstream of ~~an infusion pump~~ the pump mechanism and adjacent ~~an upstream infusion~~ the fluid line, the pressure sensor configured to provide pressure signals representative of the pressure within the ~~upstream~~ fluid line upstream of the pump mechanism;

a data base located remotely from the infusion pump;

a memory disposed at the infusion pump; and

a processor in communication with the pressure sensor, the data base, and the memory, the processor programmed ~~to monitor a parameter representative of a status of an infusion of fluid into a patient, the processor also programmed~~ to sample pressure signals received from the pressure sensor over a plurality of selected pump cycles comprising more than two pump cycles, ~~as a function of the status of the infusion, and to analyze the sampled signals to determine if the pressure in the upstream fluid line is decreasing~~ to compute for each of the plurality of selected pump cycles an average value from the pressure signals received, to store the computed average values in the memory, to determine a rate of change of the stored average values, to generate a blocked vent alert when the determined rate of change exceeds a limit for normal venting conditions, and to provide the data base with information including any alert generated;

wherein the blocked vent alert includes a notification indicating that the vent should be opened.

11. (New) The system of claim 1 further comprising a data base located remotely from the infusion pump, wherein the processor communicates with the data base to provide

information regarding the progress of infusion to the data base, the information including any alerts generated.

12. (New) The system of claim 1 wherein the processor is configured to compute a first average value from the pressure signals sampled over a first pump cycle, compute a second average value from the pressure signals sampled over a second pump cycle subsequent to the first pump cycle, determine whether the second average value is less than the first average value by more than a predetermined value, and provide the blocked vent alert when the second average value is determined to be less than the first average value by more than the predetermined value.

13. (New) The system of claim 12 wherein the second pump cycle is a predetermined number of pump cycles subsequent to the first pump cycle.

14. (New) The system of claim 12 wherein the fluid container has a size and type, and the predetermined value is associated with the size and type of the fluid container.

15. (New) The system of claim 1 wherein the alert includes a notification indicating that the vent should be opened.

16. (New) The system of claim 1 wherein the plurality of pump cycles comprises more than two pump cycles.

17. (New) The system of claim 16 wherein the processor is configured to compute a slope from the average values computed from pressure signals received from the plurality of more than two pump cycles in determining the progressive reduction in pressure in the fluid line;

whereby determining the progressive reduction in pressure is resistant to effects of movement and environmental artifact.

18. (New) The system of claim 17 wherein the processor is configured to use a weighting algorithm to compute the slope.

19. (New) The method of claim 7 further comprising providing information to a data base including any alerts generated.

20. (New) The method of claim 7 wherein providing the alert comprises providing a notification to open the vent.

21. (New) The method of claim 7 wherein determining the rate of change of the average values comprises computing a slope from the average values;

whereby determining the rate of change of the average values is resistant to effects of movement and environmental artifact.

22. (New) The method of claim 21 wherein computing a slope comprises using a weighting algorithm.

23. (New) The method of claim 8 wherein:

processing the signals comprises processing the signals to determine a first average value for the pressure in the upstream fluid line for the first pump cycle and a second average value for the pressure in the upstream fluid line for the second pump cycle;

determining the rate of change of the average values comprises comparing the second average value to the first average value; and

providing the alert when the rate of change exceeds the limit for normal venting conditions comprises providing the alert when the second average value is less than the first average value my more than a predetermined value.